

New and little known species of Dolichopodidae from China (III)

by Ding YANG

Abstract

Eight species of the family Dolichopodidae are described as new to science: *Ludovicius emeishanus*, *L. yunnanensis*, *Hercostomus (Hercostomus) flaviscutellum*, *H. (H.) zhongdianus*, *Dolichopus zhongdianus*, *D. subapicalis*, *Phalacroseta hu-beiensis*, *Rhaphium qinghaiense*. One species is recorded from the China for the first time: *Rhaphium riparium* (MEIGEN).

Key words: Dolichopodidae, new species, China

Introduction

The present paper is the third in a series of papers dealing with the Chinese fauna of the Dolichopodidae. Here, 8 new species are described and a species is reported for the first time for the Chinese fauna. A key to the known species of the genus *Ludovicius* from China is presented. The types of the new species are mainly deposited in the Insect Collection of China Agricultural University (CAU) except some paratypes kept in the Institut Royal des Sciences naturelles de Belgique (IRSN). The abbreviations used here are similar to the second one of the serial papers.

Key to species (male) of *Ludovicius* from China

1. Thorax and abdomen entirely metallic green 2
- Thoracic pleuron and base of abdomen yellow ... 9
2. Postocular hairs wholly black 3
- Lower postocular hairs yellow 7
3. Acr present 4
- Acr absent. *Henandigitiformis* YANG, YANG et LI
4. Hind femur without ventral bristles 5
- Hind femur with 2 black strong ventral bristles. Shanghai *miricornis* PARENT
5. All coxae yellow 6
- Mid and hind coxae blackish. Sichuan *sichuanensis* YANG
6. Antenna yellow with dorsal surface and apex of first

- flagellomere blackish; first flagellomere acute apically. Gansu *curvatus* YANG
- Antenna black with baso-ventral surface of first flagellomere yellow; first flagellomere digitiform apically. Yunnan *yunnanensis* sp. nov.
7. Arista obtuse apically 8
 - Arista acute apically. Sichuan *acutatus* YANG
 8. Arista not incised apically. Xizang . *dorsalis* YANG
 - Arista incised apically. Gansu, Ningxia, Sichuan *incisus* YANG
 9. Lower postocular hairs yellow 10
 - Postocular hairs wholly black. Sichuan *emeishanus* sp. nov.
 10. Swollen apex of arista entirely black. Henan *flavus* YANG
 - Swollen apex of arista pale. Henan *henanus* YANG

Ludovicius emeishanus sp. nov. (Fig. 1)

Diagnosis. Postocular bristles wholly black. Thoracic pleuron yellow. acr absent. Abdomen yellow basally.

Male. Body length 4.0 mm, wing length 3.6 mm.

Head metallic green with pale gray pollen. Hairs and bristles on head black; postocular bristles wholly black. Antennal scape black, pedicel dark yellow; first flagellomere broken. Proboscis yellow with black hairs; palpus yellow with pale hairs.

Thorax metallic green with pale gray pollen; pleuron

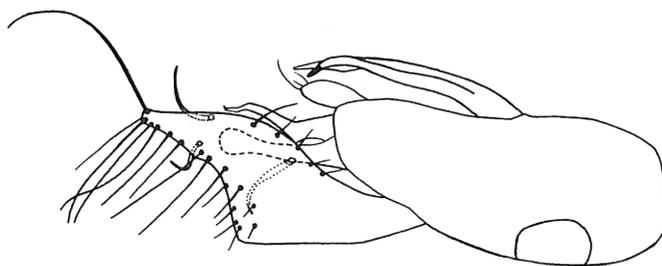


Fig. 1. – *Ludovicius emeishanus* sp. nov., male. 1. male genitalia, lateral view.

yellow except pteropleuron partly tinged with blackish. Hairs and bristles on thorax black; 6 strong dc, acr absent; propleuron pale haired, with 1 black bristle on lower part. Legs tarsi partly broken yellow; mid tarsus brown from tip of tarsomere 1 onward. Hairs and bristles on legs black; mid and hind coxae with 1 outer bristle; mid and hind femora with 1 preapical bristle; hind femur with a very long ventral bristle at base. Fore tibia with 1 ad and 2 pd, tarsomere 1 with 1 short v at base; mid tibia with 2 ad and 2 pd, tarsomere 1 with 2 short v; hind tibia with 2 ad and 4 pd, tarsomere 1 with 3 short v. Relative lengths of segments (excluding coxae, trochanters and femora) of legs LI 4.2: 2.4: 1.1: 1.1: 0.9: 0.5; LII 7.0: 3.7: 1.9:?:?:?; LIII 8.1: 2.2:?:?:?:?. Wing hyaline; veins brown; R4+5 and M weakly convergent apically, CuAx ratio 0.45. Squama yellow with blackish hairs. Halter yellow.

Abdomen metallic green; tergites 1-3 (except posterior margins of tergites 1-2) yellow; venter yellow. Hairs on abdomen black. Male genitalia (Fig. 1): Epandrium much longer than wide; lateral lobe rather short and rounded apically; cercus rather narrow basally, with concave oblique outer margin; hypandrium with slender lateral arm.

Female. Unknown.

Holotype ♂, Sichuan: Emei Mountain (1800-1900 m), 1957. VIII. 25, Youcai Yu. (CAU)

Distribution. China (Sichuan).

Remarks. This new species is somewhat similar to *L. flavus* YANG and *L. henanus* YANG in the body coloration, but may be separated from them by having the wholly black postocular hairs (YANG, 1996b).

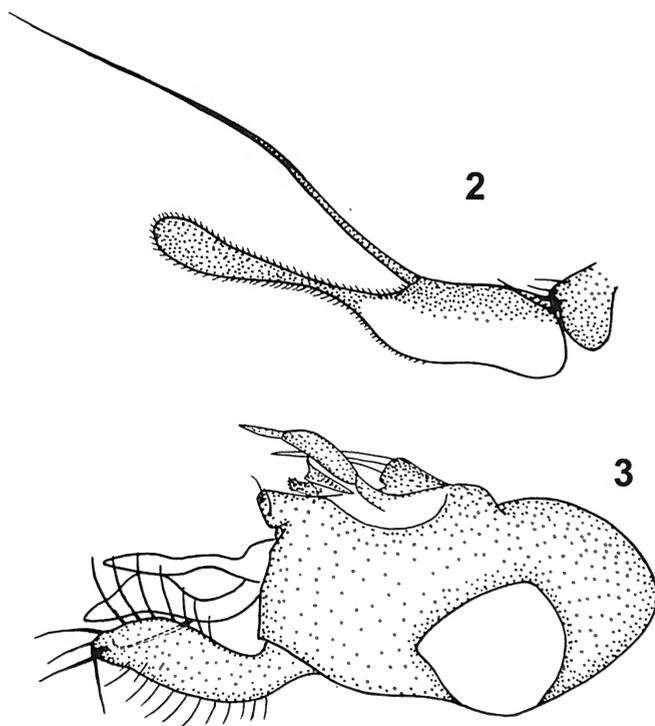
The genus *Ludovicicus* is easily identified by the following characters: antennal scape rather large and pedicel very short in lateral view; first flagellomere much elongated; arista nearly bare and one-segmented. Abdomen rather slender.

Ludovicicus yunnanensis sp. nov. (Figs. 2-3)

Diagnosis. Postocular bristles wholly black. Antenna black except baso-ventral area of first flagellomere yellow; first flagellomere much elongated, digitiform apically.

Male. Body length 5.0 mm, wing length 5.1 mm.

Head metallic green with pale gray pollen. Hairs and bristles on head black; postocular bristles wholly black. Antenna black, first flagellomere with baso-ventral area yellow; first flagellomere much elongated, and digitiform apically. Proboscis blackish with black hairs; palpus black with pale hairs. Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 6 strong dc, 3 acr short and hair-like; propleuron pale haired, with



Figs. 2-3. — *Ludovicicus yunnanensis* sp. nov., male. 2. antenna, lateral view; 3. genitalia, lateral view.

1 black bristle on lower part. Leg yellow; coxae yellow, mid coxa with a black narrow stripe; tarsi dark brown from tip of tarsomere 1 onward. Hairs and bristles on legs black; mid and hind coxae with 1 outer bristle; mid and hind femora with 1 preapical bristle; hind femur without ventral bristles. Fore tibia with 2 pd, tarsomere 1 with 1 short v at base; mid tibia with 3 ad, 2 pd and 1 pv; hind tibia with 2 ad, 3 pd and 1 av. Relative lengths of segments of legs LI 2.2: 1.4: 0.6: 0.5: 0.4: 0.3; LII 3.3: 2.1: 0.9: 0.8: 0.4: 0.3; LIII 4.0: 1.3: 1.3: 0.9: 0.4: 0.3. Wing hyaline; veins blackish; R4+5 and M convergent apically, CuAx ratio 0.5. Squama yellow with blackish hairs. Halter yellow.

Abdomen metallic green with pale gray pollen. Hairs on abdomen black. Male genitalia (Fig. 3): Epandrium longer than wide; lateral lobe very short and obtuse apically; cercus long and band-like, shallowly cleft apically; hypandrium irregularly branched apically.

Female. Unknown.

Holotype ♂, Yunnan: Zhongdian (2450 m), 1996. VI. 9, Wenju Bo. (CAU)

Distribution. China (Yunnan).

Remarks. This new species is somewhat similar to *curvatus* YANG, but may be separated from the latter by having the antenna black except baso-ventral area of first flagellomere yellow and first flagellomere digitiform apically.

Hercostomus (Hercostomus) flaviscutellum sp. nov.
(Figs. 4-5)

Diagnosis. Postocular hairs wholly yellow. Antenna yellow except apex of first flagellomere darker. Thorax yellow; dorsum metallic green, mesonotum with large lateral area of anterior half and postalar area yellow, scutellum entirely yellow.

Male. Body length 2.5 mm, wing length 3.4 mm.

Head metallic green with pale gray pollen. Hairs and bristles on thorax black; postocular hairs wholly yellow. Face narrower than first flagellomere. Antenna yellow except apex of first flagellomere blackish; first flagellomere 1.3 times as long as wide; arista black, indistinctly pubescent, with basal segment 0.25 times as long as apical segment. Proboscis brownish yellow with blackish hairs; palpus yellow with pale and blackish hairs. Thorax yellow; dorsum metallic green, mesonotum with large lateral area of anterior half and postalar area yellow, scutellum entirely yellow. Hairs and bristles on thorax black; 5 strong dc, 5-6 irregularly paired acr, short and hair-like. Propleuron pale haired, with 1 blackish bristle on lower part. Legs yellow mid and hind tarsi partly broken; all coxae yellow. Hairs and bristles on legs blackish; mid and hind coxae with 1 outer bristle; mid and hind femora with 1 preapical bristle. Fore tibia with 1 ad and 2 pd; mid tibia with 2 ad and 2 pd; hind tibia with 2 ad and 3 pd. Relative lengths of segments of legs LI 3.0: 1.6: 0.7: 0.6: 0.35: 0.35; LII 4.2: 2.1: 1.2: 1.0:?:?:; LIII 4.8: 1.35:?:?:?:. Wing hyaline; veins brownish yellow; R4+5 and M strongly convergent apically, CuAx ratio 0.35. Squama yellow with brownish yellow hairs. Halter yellow.

Abdomen metallic green; tergites 1-2 (except posterior margin of tergite 2) and venter yellow. Hairs on abdomen

black. Male genitalia (Fig. 5): Epandrium much longer than wide, with baso-lateral lobe forked; cercus nearly hemicircular; hypandrium distinctly swollen with lateral branches; aedeagus thin and straight apically.

Female. Unknown.

Holotype ♂, Xinjiang: Baicheng (1310 m), 1959. VII.22, Afu TIAN. (CAU)

Distribution. China (Xinjiang).

Remarks. This species is very similar to *abnormis* YANG from Xinjiang, but may be separated from the latter by having the mesonotum with large lateral area of anterior half and postalar area yellow and scutellum entirely yellow. In *abnormis*, the mesonotum is yellow laterally, the scutellum is metallic green basally (YANG, 1996b).

Hercostomus (Hercostomus) zhongdianus sp. nov.
(Figs. 6-7)

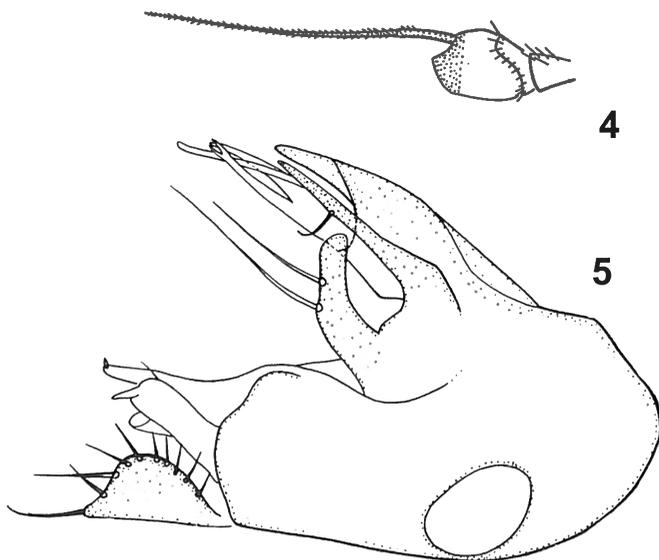
Diagnosis. Antenna wholly black. Acr and Su absent. Basal portion of 2nd costal section and basal halves of R4+5 and M thickened and dark black.

Male. Body length 4.5-4.6 mm, wing length 5.2-5.4 mm.

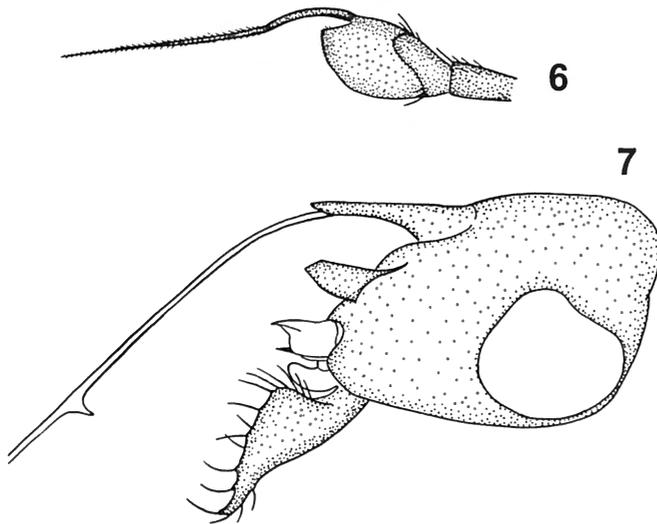
Head metallic green with pale gray pollen. Face silvery white, distinctly narrower than first flagellomere. Hairs and bristles on head black; middle and lower postocular hairs pale. Antenna wholly black; scape rather long; first flagellomere 1.2 times longer than wide, somewhat angular apically; arista black with basal segment 0.45 times as long as apical segment. Proboscis brownish and palpus black, with black hairs.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; propleuron pale haired, with 1 black bristle on lower portion. 6 strong dc, acr and su absent. Scutellum with pale marginal hairs. Legs yellow; all coxae black; apico-dorsal surface of hind femur blackish; fore tarsus black from tip of tarsomere 1 onward; mid and hind tarsi black except for mid tarsomere 1 somewhat pale basally; apical 1/8 of hind tibia black. Fore tibia with 1 ad and 2 pd; mid tibia with 4 ad, 2 pd and 1 av; hind tibia with 3-4 ad, 5 pd and 4 av; hind tarsomere 1 with 3 short v. Relative lengths of segments of legs LI 3.1: 1.4: 0.65: 0.55: 0.4: 0.3; LII 5.1: 2.6: 1.0: 0.8: 0.55: 0.35; LIII 6.4: 2.2: 1.7: 1.0: 0.7: 0.35. Wing hyaline; veins blackish; basal portion of 2nd costal section and basal halves of R4+5 and M thickened and dark black, R4+5 and M convergent apically. CuAx ratio 0.5. Squama yellow with yellow hairs. Halter yellow.

Abdomen metallic green with pale gray pollen. Hairs on abdomen black, but basally with pale hairs. Male genitalia (Fig. 7): Epandrium slightly longer than wide, with distinct lateral lobe; cercus nearly triangular; hypandrium thin with thick basal portion; aedeagus very slender with a acute denticle at apex.



Figs. 4-5. — *Hercostomus (Hercostomus) flaviscutellum* sp. nov., male. 4. antenna, lateral view; 5. genitalia, lateral view.



Figs. 6-7. — *Hercostomus (Hercostomus) zhongdianus* sp. nov., male. 6. antenna, lateral view; 7. genitalia, lateral view.

Female. Unknown.

Holotype ♂, paratype 1 ♂, Yunnan: Zhongdian (3400 m), 1996. VI. 11, Wenjun Bo. (CAU)

Distribution. China (Yunnan).

Remarks. This species is similar to *kaulbacki* HOLLIS from Tibet, but may be separated from the latter by the basal half of M thickened and squama with yellow hairs. In *kaulbacki*, M1+2 is not thickened basally, squama bears black hairs (HOLLIS, 1964).

Dolichopus zhongdianus sp. nov. (Figs. 8-10)

Diagnosis. Antennae wholly black. All coxae black; fore femur (except apex) black; hind tibia and tarsomere 1 (except of tip of the latter) yellow. Hind tarsomeres 2-5 distinctly flattened laterally.

Male. Body length 5.0 mm, wing length 6.3 mm.

Head metallic green with pale gray pollen; face densely grayish brown pollinose, wider than first flagellomere. Hairs and bristles on head black; middle and lower postocular hairs pale. Antenna wholly black; first flagellomere as long as wide, with wide apical margin; arista black with basal segment 0.45 times as long as apical segment. Proboscis and palpus black with black hairs.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; propleuron pale haired, with 1 black bristle on lower portion; 6 strong dc, 9-10 acr short and hair-like; scutellum with short marginal hairs. Legs yellow; all coxae black; fore femur (except apex) black, apico-dorsal surface of hind femur blackish; tarsi black from tip of tarsomere 1 onward. Hind tarsomeres 2-5 distinctly flattened laterally. Hairs and bristles on legs

black; coxae with partly pale hairs; mid and hind femora with 1 preapical bristle. Fore tibia with 2 ad, 2 pd, 1 pv and 1 short apv; mid tibia with 4-5 ad, 3 pd and 1 av; hind tibia with 5 ad, 1 d, 5 pd and 1 av; hind tarsomere 1 with 3 d and 2 l. Relative lengths of segments of legs LI 3.2: 1.5: 0.7: 0.5: 0.4: 0.4; LII 4.8: 2.9: 1.3: 1.0: 0.6: 0.6; LIII 6.2: 3.2: 2.6: 1.8: 1.3: 0.7. Wing hyaline, tinged with blackish on anterior field (except basal portion); costal callus indistinct. M bent without rudimentary M2, CuAx ratio 0.6. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Figs. 9-10): Epandrium much longer than wide with wide lateral lobe; cercus nearly quadrate, with some finger-like marginal processes; hypandrium with thin curved acute apex; aedeagus thin and nearly straight apically.

Female. Unknown.

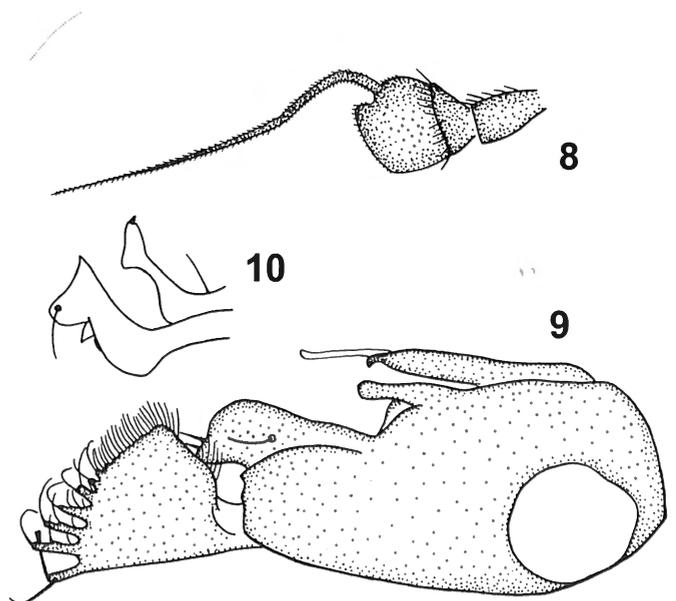
Holotype ♂, Yunnan: Zhongdian (3400 m), 1996. VI. 11, Wenjun Bo. (CAU)

Distribution. China (Yunnan).

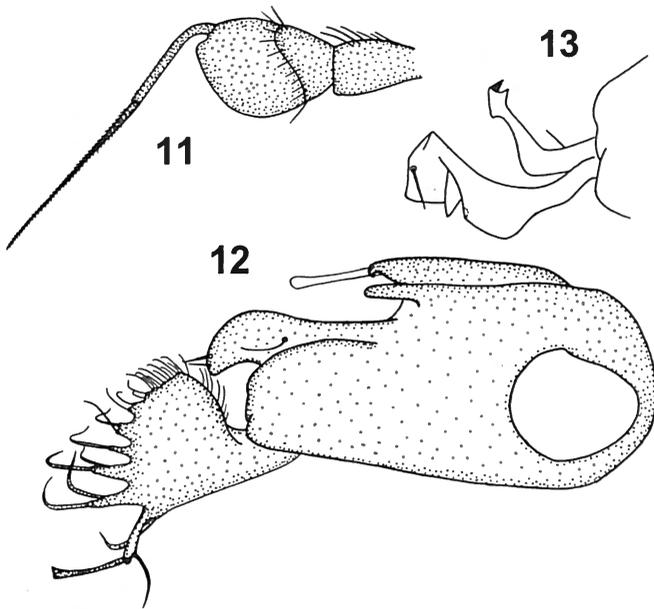
Remarks. This species is somewhat similar to *shii* YANG from China, but may be separated from the latter by having the following characters: hind tarsomeres 2-5 distinctly flattened; legs chiefly yellow. In *shii*, the hind tarsus is normal, and legs are wholly black (YANG, 1996a).

Dolichopus subapicalis sp. nov. (Figs. 11-13)

Diagnosis. Antennae wholly black; arista arising very near tip of first flagellomere. All coxae black; fore femur (except apex) black.



Figs. 8-10. — *Dolichopus zhongdianus* sp. nov., male. 8. antenna, lateral view; 9. genitalia, lateral view; 10. apical processes, lateral view.



Figs. 11-13. – *Dolichopus subapicalis* sp. nov., male. 11. antenna, lateral view; 12. genitalia, lateral view; 13. apical processes, lateral view.

Male. Body length 5.0 mm, wing length 5.4 mm.

Head metallic green with pale gray pollen; face densely brown pollinose, wider than first flagellomere. Hairs and bristles on head black; middle and lower postocular hairs pale. Antenna wholly black; first flagellomere as long as wide; arista arising very near tip of first flagellomere, black with basal segment 0.6 times as long as apical segment. Proboscis black and palpus yellow with black hairs.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; propleuron pale haired, with 1 black bristle on lower portion; 6 strong dc, 7-8 acr short and hair-like; scutellum with short dorsal and marginal hairs. Legs yellow; all coxae black; fore femur (except apex) black, apico-dorsal surface of hind femur blackish; fore and mid tarsi black from tip of tarsomere 1 onward; apex of hind tibia and entire hind tarsus black. Hairs and bristles on legs black; mid and hind femora with 1 preapical bristle. Fore tibia with 2 ad, 2 pd, 2 pv and 1 short apv; mid tibia with 5 ad, 2 pd and 1 av; hind tibia with 6 ad, 1 d, 5 pd and 1 av; hind tarsomere 1 with 2 d and 2 l. Relative lengths of segments of legs LI 3.2: 1.7: 0.8: 0.6: 0.35: 0.35; LII 4.5: 2.4: 1.3: 0.9: 0.5: 0.5; LIII 5.2: 2.2: 2.1: 1.4: 0.7: 0.55. Wing hyaline; costal callus indistinct, M bent without rudimentary M2, CuAx ratio 0.5. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Figs. 12-13): Epandrium much longer than wide with wide lateral lobe; cercus nearly quadrate, with some finger-like marginal processes; hypandrium with acute apex thin and strongly curved; aedeagus thin and nearly straight apically.

Female. Unknown.

Holotype ♂, Yunnan: Zhongdian (3400 m), 1996. VI. 11, Wenjun Bo. (CAU)

Distribution. China (Yunnan).

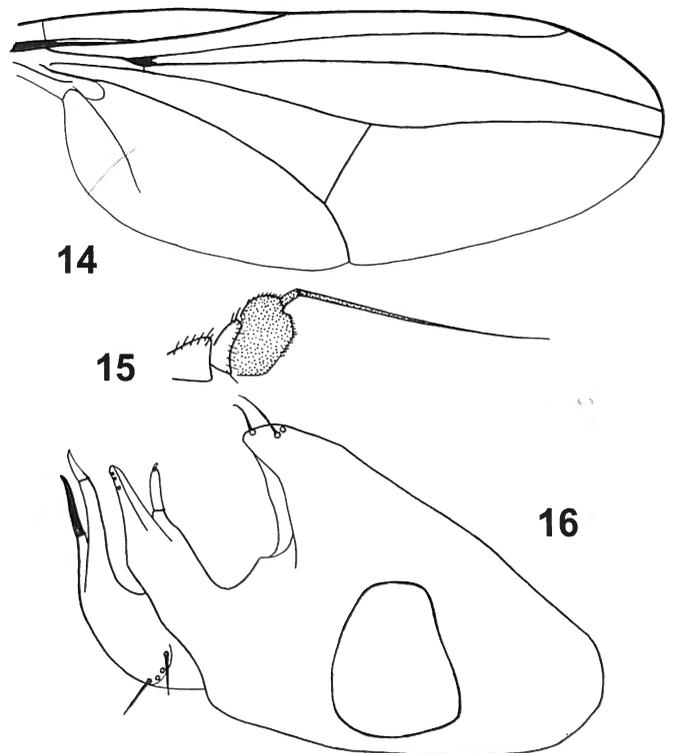
Remarks. This species is somewhat similar to *shii* YANG, but may be separated from the latter by having the following characters: arista arising very near tip of first flagellomere, wing wholly hyaline. In *shii*, the arista is arising near tip of first flagellomere, and the wing is darker on apico-anterior field (YANG, 1996a).

***Phalacrosoma hubeiense* sp. nov. (Figs. 14-16)**

Diagnosis. Postocular hairs wholly black. Pulvilli on fore and mid legs elongated. Fore tarsomeres 2-4 with dense ventral pubescence. CuAx ratio 1.4.

Male. Body length 6.3 mm, wing length 6.0 mm.

Head metallic green with dense silvery white pollen on vertex, frons and face. Hairs and bristles on head black; postocular hairs wholly black. Antenna rather small; scape and pedicel brownish yellow, first flagellomere wholly blackish, 1.1 times wider than long; arista arising near extreme apex of first flagellomere, black and nearly bare, with basal segment 0.13 times as long as apical



Figs. 14-16. – *Phalacrosoma hubeiense* sp. nov., male. 14. wing; 15. antenna, lateral view; 16. genitalia, lateral view.

segment. Proboscis brownish yellow and palpus yellow with black hairs.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; propleuron pale haired, with 1 black bristle on lower portion; 6 strong dc, 7-8 irregularly paired acr short and hair-like. Legs yellow; fore coxa yellow, mid and hind coxae blackish; tip of hind femur black; fore and mid tarsi dark brown from tip of tarsomere 1 onward; apical 2/5 of hind tibia and entire hind tarsus black. Hairs and bristles on legs black; mid and hind femora with 1 preapical bristle; femora with distinct ventral hairs; fore tarsomeres 2-4 with dense ventral pubescence. Pulvilli on fore and mid legs well developed and elongated. Fore tibia with 2 ad; mid tibia with 1 ad and 2 pd; hind tibia with 2 ad and 4 pd. Relative lengths of segments of legs LI 6.8: 3.8: 1.2: 0.4: 0.7: 0.7; LII 8.2: 4.2: 2.2: 1.35: 0.9: 0.65; LIII 9.8: 2.3: 3.0: 2.0: 1.2: 0.7. Wing hyaline; veins blackish, R4+5 and M convergent apically; CuAx ratio 1.4. Squama yellow with black hairs. Halter yellow.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Fig. 16): Epandrium much longer than wide, narrowly elongated and forked apically; cercus somewhat tapering and curved, forked apically; hypandrium rather thick apically.

Female. Unknown.

Holotype ♂, Hubei: Shennongjia (400 m), 1984. VI. 26, Chi-kun YANG. (CAU)

Distribution. China (Hubei).

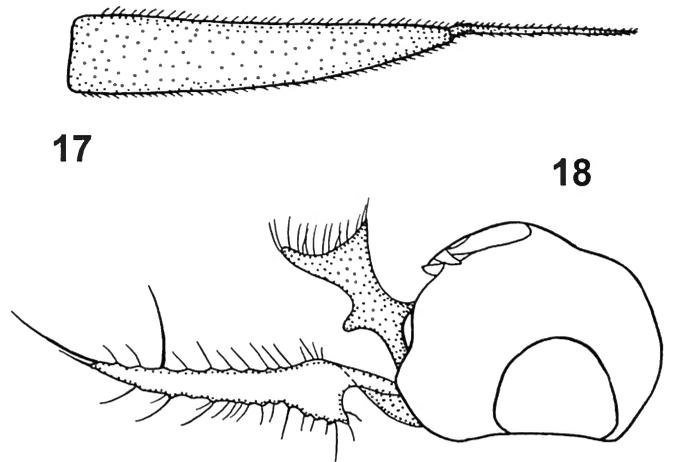
Remarks. This species is somewhat related to *P. zhejiangense* YANG from Zhejiang in having the simple fore tarsus but the other known species of the genus bear fore tarsomeres 1-2 or 3-5 flattened (WEI & LIU, 1996; YANG, 1997). It may be easily separated from *zhejiangense* by having the postocular hairs wholly black and CuAx ratio 1.4.

Raphium qinghaiense sp. nov. (Figs. 17-18)

Diagnosis. Fore coxa with pale hairs and bristles; fore femur without outer long hairs. Hind legs with apex of femur and the rest black.

Male. Body length 3.0-3.1 mm, wing length 3.1-3.4 mm. Head metallic green with pale gray pollen; frons violet with pollen. Hairs and bristles on head black; middle and lower postocular hairs pale. Antenna black; length of scape equal to width of first flagellomere; first flagellomere much elongated, 5.9 times longer than wide; arista rather short, as long as 1/2 of first flagellomere. Proboscis and palpus black with black hairs.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 6 strong dc, 1st anterior dc rather short; 7-8 acr short and hair-like. Legs yellow; basal portion of fore coxa and mid and hind coxae black; apex



Figs. 17-18. – *Raphium qinghaiense* sp. nov., male. 17. antenna (excluding scape and pedicel), lateral view; 18. genitalia, lateral view.

of hind femur, and hind tibia and tarsus black; fore and mid tarsi brown to black from tip of tarsomere 1 onward. Hairs and bristles on legs black; hairs and bristles on fore coxa pale, hairs on mid and hind coxae pale, mid coxa with 2 black bristles, hind coxa with 1 black bristle; mid and hind femora with 1 preapical bristle. Fore tibia with 1-2 ad, 1 pd and 1 short distinct apv; mid tibia with 2-3 ad and 2 pd; hind tibia with 2-3 ad and 2 pd. Relative lengths of segments of legs LI 3.3: 1.5: 0.75: 0.4: 0.3: 0.5; LII 4.6: 2.2: 1.1: 0.8: 0.55: 0.5; LIII 6.3: 1.75: 2.0: 1.3: 1.0: 0.75. Wing hyaline; veins black, R4+5 and M convergent apically, CuAx ratio 0.4. Squama yellow with pale hairs. Halter yellow.

Abdomen metallic green with pale gray pollen; hairs black. Male genitalia (Fig. 18): Epandrium nearly quadrate; surstylus rather wide apically, its apical margin concave, with processes at middle; cercus long and more or less tapering toward apex.

Female. Unknown.

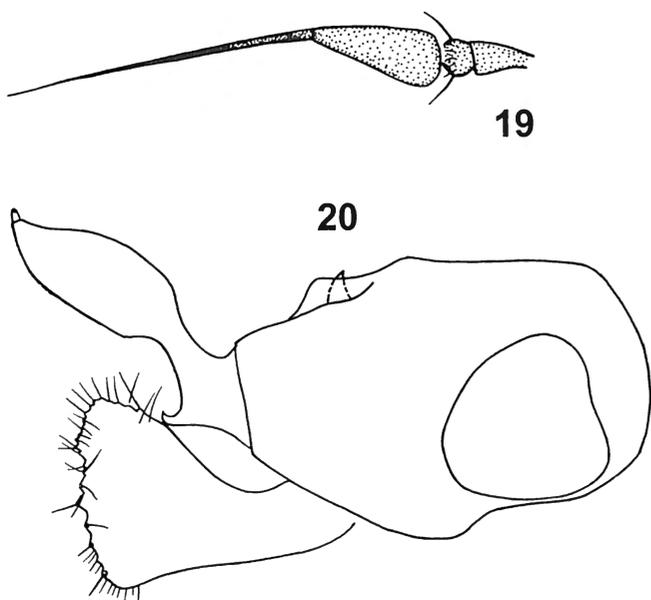
Holotype ♂, paratype 1 ♂, Qinghai: Menyuan, 1989. VII. 14-18, Meicai WEI; paratypes 5 ♂♂, Qinghai: Menyuan, 1990. VI. 28-VII.30, Meicai WEI. (CAU & IRSN)

Distribution. China (Qinghai).

Remarks. This species is similar to *albifrons* ZETTERSTEDT from the Palaearctic region, but may be separated from the latter by having the hind legs with apex of femur and the rest black and male cercus not forked basally. In *albifrons*, the hind leg is chiefly yellow and the male cercus is forked basally (NEGROBOV, 1979).

Raphium riparium (MEIGEN) (Figs. 19-20)

Porphyrops riparium MEIGEN, 1824, Syst. Besch. 4: 53. Type locality: not given.



Figs. 19-20. – *Rhaphium riparium* (MEIGEN), male. 19. antenna, lateral view; 18. genitalia, lateral view.

Diagnosis. Legs chiefly black; fore and mid tibiae yellow; hind tibiae dark yellow with blackish base and black apex. Fore femur with a row of strong ventral bristles. Fore femur with long outer hairs.

Male. Body length 4.3 mm, wing length 3.5 mm.

Head metallic green with pale gray pollen; face silvery white. Hairs and bristles on head black; middle and lower postocular hairs pale. Antenna black; first flagellomere 2.1 times longer than wide; arista rather long, 1.9 times as long as first flagellomere. Proboscis and palpus black with black hairs.

Thorax metallic green with pale gray pollen. Hairs and bristles on thorax black; 5 strong dc, 5-6 acr relatively long. Legs black; knees brownish yellow; fore and mid tibiae yellow, hind tibia dark yellow with blackish base and black apex; fore and mid tarsi brown to dark brown with tarsomere 1 (except tip) yellow. Hairs and bristles on legs black; fore coxa with pale hairs and 2 black bristles, mid coxae with pale hairs mixed with some black hairs on antero-apical portion; hind coxa with pale hairs; mid and hind coxae without outer bristles. Fore femur with pale long outer hairs and one row of strong ventral bristles. Mid femur with 2 preapical bristles; hind femur with 1 preapical bristle. Fore tibia with 3 ad and 2 pd; mid tibia with 3 ad, 4 pd and 3 av; hind tibia with 4 ad, 3 pd and 1 short av; fore tarsomere 1 with dense ventral hairs, tarsomeres 2-5 with sparse short ventral hairs. Wing hyaline; veins black, R4+5 and M somewhat convergent apically, CuAx ratio 0.6. Squama yellow with pale hairs. Halter yellow.

Abdomen metallic green with pale gray pollen. Hairs

on abdomen black; tergites 1-3 with pale hairs laterally. Male genitalia (Fig. 20): Epandrium distinctly longer than wide; surstylus rather long, contracted near base, with a small curved process at base; cercus widening toward apex, with indistinct marginal denticles.

Specimen examined. 1 ♂, Qinghai: Menyuan, 1990. VI. 28, Meicai WEI.

Distribution. China (Qinghai); Holarctic region.

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